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MOBILE HOMES
A Manufacturing Opportunity
in Valdosta, Georgia

by
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and
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Engineering Experiment Station
Georgia Institute of Technology
Atlanta, Georgia

Project A-355

M O B I L E H O M E S

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Summary

One of the very few remaining sections of the United States where a mobile home manufacturer can establish a branch plant and make a profit is the Southeast.

With less than half the number of manufacturers found in California alone, the Southeast has a much larger market than the Far West. The Southeast (Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, and Tennessee) consumes 23,000 new mobile homes a year. The annual productive capacity of manufacturers in the area is approximately 17,000, with production considerably less than capacity. Thousands more mobile homes are therefore sold in the Southeast each year than are made there. These coaches are towed in from the North.

Furthermore, the fabricated cost of the coaches made in the Southeast should be less than in the North and the total freight costs will be from \$350 to \$600 less. Aside from the freight savings that can result from shipping the raw materials to the market instead of shipping the completed coach, additional savings will result from the fact that few of the raw materials would have to be shipped as far as a northern manufacturer would ship the completed mobile home. Many northern manufacturers are now farther from components than they would be in Georgia.

The competitive situation also is more inviting. Other sections not only have more manufacturers of mobile homes competing for the market, but have keener competition also from producers of prefabricated homes. In Florida, especially (for technical reasons), prefabricated homes simply have not sold well.

A plant in south Georgia can serve the Florida market without sacrificing the ability to serve other states as well. Among possible south Georgia locations, Valdosta is the most promising in which to establish a plant for the following reasons:

1. It is north of the Florida arbitraries lines, south of which freight rates increase considerably.
2. It has an excellent distribution system, with three railroads and 10 truck lines.
3. Shipments can be made directly east and west without first being shipped north.

4. It is large enough to furnish all basic services, yet small enough so that there is no terminal congestion.

5. It has a history of successful metalworking.

6. It has a history of its labor continually and fully replacing itself. As quickly as new plants have moved in, additional workers have moved into the area to replenish the work force.

INDUSTRY GROWTH

In 1958, sales of new mobile homes in the nation were about 133,750 units. This was a decrease of eight per cent from 1957, an all time high, and was even substantially below the 1956 figure. It is true that 1958 was a recession year, perhaps accounting for the drop, but it is significant that 1957 sales barely topped those in 1956 after a long period of large increases year after year. It is also of interest that 1958 sales decreased in a year when the construction of traditional housing was on the increase. (See Table 1.) However, 1959 sales are encouraging. Sales for the first six months are higher than for the same period of 1957.

Table 1

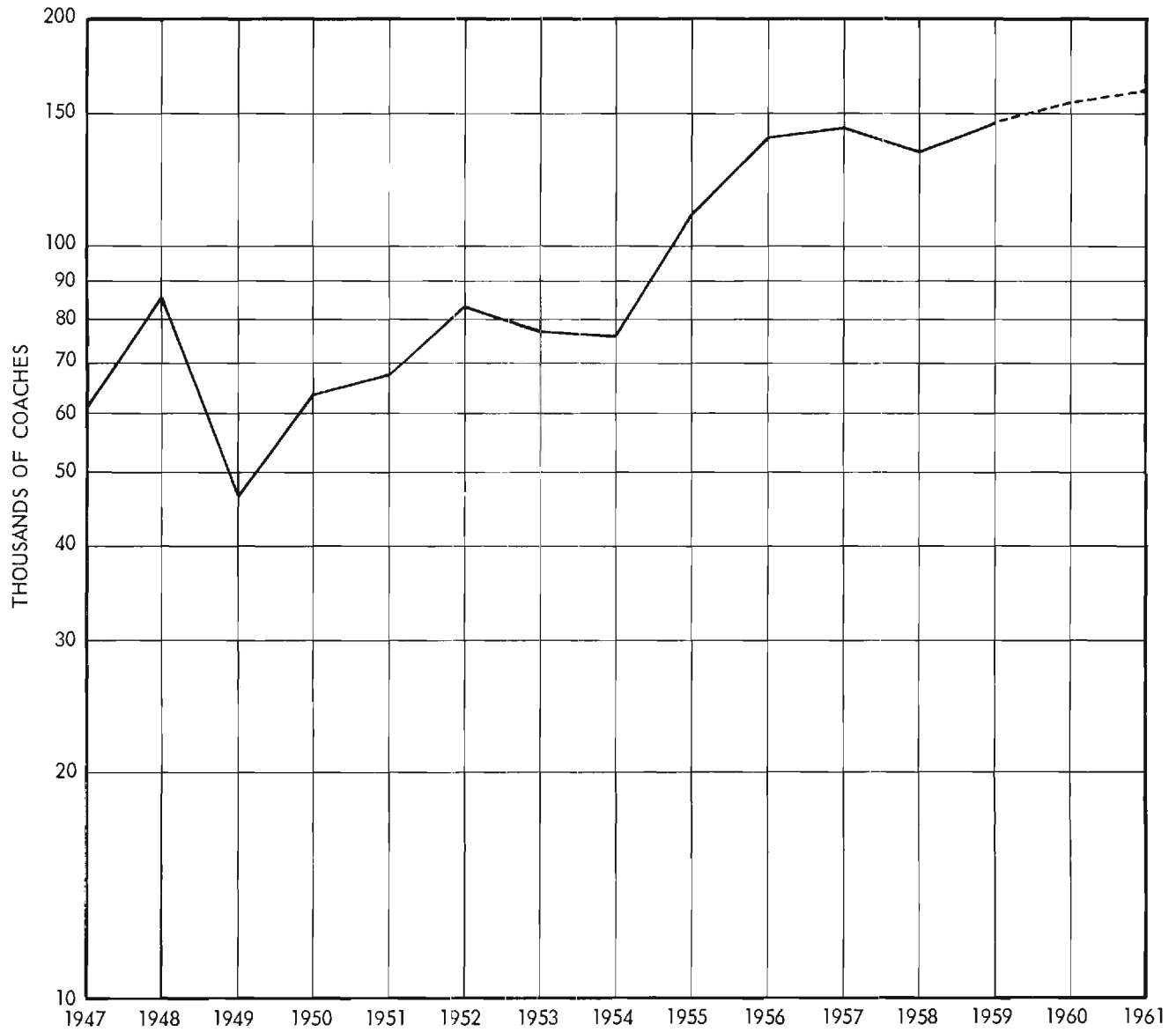
<u>Year</u>	<u>Housing Starts (Single Family Dwellings) (000)</u>	<u>New Mobile Homes</u>		
		<u>Per Cent Increase Over Previous Year</u>	<u>Sales</u>	<u>Mobile Homes as a Per Cent of Housing Starts</u>
1954	1077.9		76,054	7
1955	1194.4	47	111,784	9
1956	989.7	25	139,690	14
1957	872.7	1	143,000	15
1958	975.1	-9	133,750	13

Source: Mobile Home Manufacturers Association, "Construction Review."

With 1956 and 1957 sales almost the same and 1958 sales down, even though construction of traditional housing was increasing, one might be tempted to think that the mobile industry had passed its peak. However, 1958 was a recession year and housing starts are not housing sales. Furthermore, sales of mobile homes showed a strong recovery in the last half of 1958 and the first half of 1959.

Although the industry is still young and no definite trend has been established, it seems certain that mobile home sales have a good future. There has not been enough experience yet to be certain, but indications are strong that mobile home sales may tend to follow the trend of housing starts. It would be safe to estimate that sales will not drop below 13 per cent of single family

CHART I
ANNUAL SALES OF MOBILE HOMES IN U.S. 1947-1959



SOURCE: *Mobile Homes Manufacturers Association*

housing starts on a national basis. On the other hand, there is as yet no evidence that the industry is in for another boom now that the recession is over. It seems more likely, therefore, that for the nation as a whole the market is leveling off and can be expected to continue increasing, with interruptions, at a lower rate than in the past. The market in 1965 might not exceed 175,000.

For the individual manufacturer, however, prospects for increasing sales may have to be postponed until the industry itself matures--until the marginal companies go out of business, industry standards are widely accepted, and customers are more brand conscious. Many northern manufacturers will be unable to survive, not only because of fierce competition but also because a new competitor has become established in the center of the mobile home stronghold. Prefabricated homes are being widely accepted in the very area where coach manufacturers are most highly concentrated. On the other hand, for technical reasons prefabricated houses do not sell in Florida.

To expand sales today a company will have to put a branch in a region where the market is not yet mature. It seems likely that the northern market has matured. In other words, past increases in sales have been the result of the increasing popularity of mobile homes which accompanied the breaking down of the consumer resistance to trailer living. In a mature market sales rises are related to population changes and perhaps to income.

Regional Markets

On the basis of square miles,^{1/} the far western states (California, Oregon, and Utah) are about the same size as the southeastern states (Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, and Tennessee). Nevertheless, although there are more than twice as many manufacturers in the Far West as there are in the Southeast, the market in the Southeast is much larger. And, the East North Central states (Illinois, Indiana, Michigan, Ohio, Wisconsin) have five times as many manufacturers as the Southeast, but the market is not much larger. (See Table 2.)

The Southeast offers the second largest market in the U. S. Over 23,000 new units are sold annually in seven southeastern states. Approximately

^{1/} Since transportation is so important, sales per square mile is believed to be a good standard for market evaluation.

Table 2

MOBILE HOMES MARKET CONCENTRATION IN THREE MAJOR AREAS

<u>Area</u>	<u>Per Cent of U. S. Sales</u>	<u>Area in Square Miles</u>	<u>Per Cent of U. S. Area</u>
<u>U. S. Total</u>	<u>100.0%</u>	<u>3,022,387</u>	<u>100.0%</u>
<u>East North Central</u>			
Illinois	4.3%	56,400	1.9%
Indiana	3.8	36,291	1.2
Michigan	4.4	58,216	1.9
Ohio	4.7	41,222	1.4
Wisconsin	<u>2.0</u>	<u>56,154</u>	<u>1.9</u>
Total	19.2%	248,283	8.2%
<u>Southeast</u>			
Alabama	1.7%	51,609	1.7%
Florida	7.5	58,560	1.9
Georgia	1.7	58,876	1.9
Mississippi	0.8	47,716	1.6
North Carolina	2.3	52,712	1.7
South Carolina	1.7	31,055	1.0
Tennessee	<u>1.5</u>	<u>42,244</u>	<u>1.4</u>
Total	17.2%	342,772	11.3%
<u>West</u>			
California	9.0%	158,693	5.3%
Nevada	0.7	110,540	3.7
Oregon	<u>2.0</u>	<u>96,981</u>	<u>3.2</u>
Total	11.7%	366,214	12.1%

Source: Mobile Home Dealer

10,000 mobile homes were sold in Florida alone during each of the past three years.^{1/}

More than 17 per cent of the market for the U. S. is in seven southeastern states; seven and one half per cent is in Florida. Furthermore, the Florida market can be expected to increase rapidly. Between April, 1950 and July, 1958, Florida's population increased by 60 per cent--four times the national average. This increase has been partly caused by in-migration due to industrialization, partly by an influx of retired people. Both trends will continue, with retired couples in all probability offering a major market for mobile homes. For a retired couple, 400 to 500 square feet of efficient living space is likely to be enough, and generally, more living can be accomplished per square foot in mobile homes than in traditional homes because of the better overall planning in the mobile home layout.

Where the Southeast (excluding Florida) is concerned, mobile home acceptance by the public is several years behind that in the North. Even though the rate of sales increases rapidly it will be many years before the Southeast achieves the status of a mature market. An added advantage is not having to dispose of a large number of used coaches as well as the new ones.

A growing southeastern regional market seems assured. The market in Florida is assured because the population, especially the mobile home buying portion of the population, is increasing so rapidly and because the climate is especially advantageous for mobile home living. The market in the rest of the Southeast should expand because so far only a small percentage of the population owns mobile homes and because the manufacture of the coaches locally should strongly assist in their promotion.

There is a definite correlation between population growth and mobile home sales with the family formation age corresponding fairly closely to the age when people begin to purchase. Mobile workers, military personnel and retired people are the main buyers, according to Mobile Home Dealer. Two of these categories are made up largely of young people.

Probably, not more than 27,000 new units per year will be sold in the Southeast before 1965. Around 1965, however, there will start a new boom in

^{1/} Mobile Homes Manufacturers Association; Marketing Information Associates; Trailer News Publishing Company.

The Mobile Home Dealer using the census breakdown rates the East North Central states first with 19.2 per cent of the market and the South Atlantic states as second. This report uses the Southeast as an area since it is much more of an economic unit than the South Atlantic states.

family formations resulting from the large number of births in the early forties. During this period significant increases in purchases of mobile homes can be expected. In addition more and more people are living past retirement age. Large numbers of these people each year move South and buy mobile homes.

There is capacity in the Southeast for the manufacture of 17,000 mobile homes a year, with sales of 23,000 already. Many northern companies still ship coaches into the Southeast, but must pay a high freight penalty for doing so. Freight savings and the growing market therefore offer strong inducements for northern firms to locate branch plants in the Southeast.

LOCATION FACTORS

The Indiana area has been the section where traditionally both sales and manufacture of mobile homes were located. Recently, this section has shown signs of becoming a mature market--growing, but no longer at a rapid rate. On the other hand, the number of manufacturers has been expanding at an explosive rate at the very time sales have shown signs of leveling off.

In the past three years, there has been a remarkable growth in the number of mobile home manufacturers. There are at least 375 plants now, only a small proportion of which have been in business since 1950. A large number have been in business less than two years. Most of these newcomers have established plants in the Indiana-Michigan area and in California. There are almost 150 manufacturers in the five states bounded by the Mississippi River, the Ohio River, and the Great Lakes. At the same time as this tremendous expansion in the North and West has been taking place a moderate number of plants have been established in the Southeast. At first the plants located in Florida. Lately, the new plants have been going to south Georgia. Ten of Georgia's eleven plants are branches of national firms.

The Southeast has become a separate market in its own right, attracting local capital in several localities to start new plants. It has also attracted branches of northern companies. Since the northern companies have not been tied to particular cities, most of them have settled in south Georgia for distribution reasons.

Transportation Costs

The major factor involved in locating a mobile home plant is proximity to the market. Not only is liaison with dealers greatly facilitated, but being near the market reduces freight costs considerably. It costs a great deal more to ship a completed coach than to ship the component parts. The average trailer today is large and weighs between five and six tons. Hauling a mobile home from the North to the Southeast adds as much as \$600 to its cost. Even if all the components had to be shipped from the Midwest for assembly in the Southeast, a minimum saving of five to seven cents a ton mile could be expected--\$175 to \$350 on each trailer, depending on trailer size and length of haul.

The freight on component parts is much less than on the finished product because parts can be nested, stacked, and otherwise shipped more compactly. Finished trailers have a considerable amount of waste space and must be towed individually. Even if the component parts were shipped from the North to the Southeast for assembly, the substantial savings in freight would mean a more competitive retail price.

Raw Materials

However, few if any of the components must be shipped such a distance. Additional savings would accrue because most of the component parts are made in the Southeast. Many a northern manufacturer would be closer to sources of raw materials in Georgia than he is at present. This proximity would not only result in freight savings but it would also reduce inventory requirements.

The plywood comes from the West Coast. Transportation by water to the Southeast gives the Southeast a freight advantage. Lumber also has been shipped from the West Coast, but there is no reason why Georgia should not be able to furnish all the lumber any industry could need. South Georgia could almost be described as one vast forest, and more than one highly automated sawmill can supply large quantities at close tolerance.

Steel, which represents the bulk of the mobile home's weight, is made in both Birmingham and Atlanta. Aluminum comes from Lister Hill, Alabama and Alcoa, Tennessee. Mobile home stoves are made in southeast Tennessee. Furniture for mobile homes is made in several places in south Georgia. The rugs are made in north Georgia and distributors for mobile-home supplies range from Atlanta to Ocala, Florida. In other words, the equivalent of most of the towing costs on a finished mobile home could be saved. This amounts to between \$350 and \$600 and in most cases represents more than 10 per cent of the wholesale price of the mobile home. It could easily represent the difference between a profitable and an unprofitable operation.

Price Competition

No doubt there will come a time when people generally shop for brand name mobile homes. That time has not yet come, and since it is difficult for the purchaser to tell a quality coach from a poorly constructed one, price is a most important factor. With such a large number of manufacturers in the business, many of whom likely do not know their own costs, and with price the bargaining factor, sharper competition is bound to ensue. Most of the unsound

companies will be forced out of business, but not before the sound ones suffer considerable loss. Some of the financially stable companies can improve their situations by establishing branch plants in the Southeast, where their costs can be cut substantially.

Since there is not such a long tradition of mobile home manufacture, technical knowledge is not widely held. There is therefore much less chance that new "home-grown" companies will be established.

South Georgia as a Plant Location

The coastal plain of Georgia has proved to be an excellent place to assemble and distribute mobile homes. Ten of Georgia's eleven plants are on the coastal plain and these ten are all branches of national companies. A position on Georgia's coastal plain permits shipment east and west as well as north and south; it also places the plant above the Florida arbitraries line. Florida is the big market. Consequently, a plant should be as close as possible to this market; but it must not as a result sacrifice its ability to serve the balance of the Southeast.

The coastal plain is the southern half of Georgia. Locations here have the advantage of being close to the big Florida market without suffering the distribution restrictions suffered by a plant located on the peninsula itself. Florida's freight structure is based on its peculiar geography. As freight goes into Florida, the chances grow rapidly that the return trip will be made without a load. Therefore, the freight rates rise by an average of 15 per cent in the peninsula.^{1/} Consequently, shipping raw material into Florida that is going to be shipped out again in a manufactured form adds extra cost to the finished product. Half of the southeastern market is in the states other than Florida. Only a south Georgia location puts a plant close to the Florida market, yet avoids the arbitraries zone and allows direct shipment of mobile homes to all points of the compass.

Florida uses a larger proportion of 10 foot wide trailers than the nation as a whole. Trade sources estimate that 90 per cent of Florida's sales are of mobile homes 10 feet wide. (Only 72 per cent^{2/} of national sales are of coaches this size.) Therefore, the mobile homes sold in Florida will bear higher freight charges per mile than those sold elsewhere on

^{1/} Lumber receives special rates and is not affected by the so-called "arbitraries" rates.

^{2/} Marketing Information Associates, Chicago, Illinois.

the average. Fortunately, trailers towed into Florida are not affected by the arbitrariness of rates as most of the raw materials would be, since mobile homes are transported on a straight mileage basis.

VALDOSTA AS A LOCATION

In choosing an actual location, a company will want a city with the following specifications:

1. one in which the product can be manufactured at minimum cost;
2. one with excellent distribution facilities, including the best possible rail and truck facilities to bring in raw materials and a good highway network for shipment of the mobile homes.

Valdosta fits both these specifications, as well as being in the proper location. It is large enough to furnish the basic services needed and to have several plant sites from which to select. On the other hand it is not so large that there is any congestion. Moreover, Valdosta is the only city in the area that has all the characteristics outlined below.

Labor

Georgia cities without any history of metalworking have easily provided highly productive work forces for the mobile home industry. But, Valdosta already has an excellent history of successful metalworking, both in aluminum and in steel. In addition to the substantial work force at Moody Air Force Base, there are several metalworking companies in Valdosta itself. One of them has several plants in the vicinity employing several hundred workers.

This particular employer, a midwestern manufacturer, has stated that labor in the Valdosta area is more productive than in the Midwest and that the Valdosta area is ideal for manufacturing anything that does not suffer from a freight disadvantage.^{1/} This manufacturer must absorb substantial freight charges in shipping into the Midwest where many competitors are producing, and he does so profitably.

Despite its remarkable industrial growth in the past several years, Valdosta has always furnished several times as many applicants as there were jobs. Applications frequently run ten times as high as the number of jobs

^{1/} The above statement on a company letterhead is on file in the Valdosta and Lowndes County Chamber of Commerce office, with similar statements from the other manufacturers in the area.

available. As rapidly as new jobs have been provided, the available labor force has been replenished by new job seekers.

As an example of how rapidly the labor pool can be replenished, Lowndes County's non-agricultural jobs increased by 5,720 in the seven years from 1950 to 1957, almost doubling. Nevertheless, in 1958 new firms were still receiving several applications for each job offered, because the population had increased 39 per cent in seven years. Over 7,000 people had moved into the city. The source of these job seekers is the great pool of underemployed farm workers. Modern machines have eliminated the need for most of the hand labor on the farm. A whole family is employed on a farm that could be handled by two men and a tractor. These people are exceptionally anxious to supplement their family incomes. Since there are many applicants for each job, competition is strong and only the best workers need be selected. The employees have no tradition of limited production and outproduce workers in the traditionally industrialized areas. As noted above, this high productivity is documented on company letterheads and has been confirmed by local plant managers.

Transportation

Valdosta's excellent transportation facilities have been analyzed in a report published separately.^{1/} However, the summary is reproduced below. The arbitraries rates do not apply to the finished mobile home but do apply to the greater portion of the raw materials.

Valdosta is in a unique position in the distribution and transportation of three different types of products:

1. products with a southeastern market, a large percentage of which is in Florida;
2. products sold to the paper industry; and
3. products sold to the mobile home industry.

Its position is rendered unique by a combination of factors:

1. three competing railroads and 10 truck lines resulting in:
 - a. competitive rates,
 - b. reduced line hauls;
2. a location north of the "arbitraries" line in Florida without being so far north as to require an extra line haul to southern points;

^{1/} Melvin H. Greenhut and J. R. Peterson, "An Evaluation of the Transportation Facilities of Valdosta, Georgia," Georgia Tech Engineering Experiment Station, 1959.

3. a location far enough south so that regular shipments of truckloads can reach Miami overnight;
4. a location on the new federal limited access interstate highway;
5. carriers that can serve direct points and can interchange generally with carriers on a one- and two-line haul basis;
6. a community large enough to supply all basis services, but small enough so that there is no terminal congestion.

Three competing railroads with seven tracks radiating from the city permit rail shipments to all points of the compass, tend to reduce rates, and reduce the average number of line hauls required for product distribution by allowing the shipper to choose the railroad that best serves his destination.

Having more than one railroad in a city creates competition among the haulers. Although there is a common belief that the Interstate Commerce Commission sets the rates, this is true only to a limited extent and then mainly from the standpoint of its being an approving or disapproving agency. Railroads do compete with each other and with other forms of transportation. Therefore, a city with more than one railroad or with other modes of transportation available may well have lower rates than a city where no or little competition exists. Valdosta not only has three railroads, but 10 truck lines operate within the city; five of them have terminals. Naturally, where such competition exists, service and rates will be competitive.

Reduction in the number of line hauls for shipments has two advantages:

1. reduction in switching costs,
2. reduction in shipping time.

Switching costs represent additional cost above the mileage cost for distances under 500 miles. Each additional line haul increases freight charges. Valdosta is fortunate in that a company can select a routing for its raw materials so as to minimize freight charges.

Switching costs are less important in trucking. Nevertheless, switching is a factor in cost and it is also a factor in time delay. As already noted, Valdosta's big advantage in trucking is that its carriers can serve direct points and generally interchange with connecting carriers on a one- and two-line haul basis.

Rates on freight into Florida rise rapidly in a series of steps as the material moves into the peninsula. These additional freight costs are called "arbitraries." This sharp rise is caused by the likelihood that the carrier will return a like distance without a load. A Florida plant trying to supply the Southeast, therefore, must often ship raw materials at high rates down into the peninsula and then ship the fabricated product back out again. A Valdosta plant, north of the arbitraries line, would have a considerable freight advantage. Raw

materials would not have to be shipped into the peninsula at high freight rates, assembled or modified, and then shipped north again with the result that high freight costs would be further increased.

The particular advantage pointed out above depends on Valdosta's being far enough north. But Valdosta also is far enough south so that arrangements can be made for regular shipment of full truckloads as far as Miami overnight. 1/

Good as the trucking transportation is now, it will improve considerably in the future. Valdosta will be on the new four-lane federal limited access highway paralleling U. S. Highway No. 41. This new interstate road will considerably improve the transportation service south, north and west. Conceivably, it could even improve truckload rates.

Finally, with regard to Valdosta's motor-truck position compared to rival cities in north Florida and south Georgia, the following is quoted from a response to an inquiry:

"Valdosta has special advantages over Florida cities because we have carriers that can serve direct points and interchange with connecting carriers on a one- and two-line haul basis. Some larger cities do not have over one carrier that can serve direct points and can interchange with all carriers."

Generally, Valdosta has an excellent distribution system, certainly the best in the area--especially when the lack of congestion is considered. If for some particular commodity a freight rate disadvantage exists, in all probability the carrier involved will publish an exception or arrange in some other way for an adjustment, once the inequity is known.

The attitudes of the transportation officials strongly suggest that they are anxious to cooperate in any way to further the development of Valdosta.

Valdosta is the city best situated to serve Florida markets without sacrificing the ability to serve the balance of the Southeast.

1/ This service requires arrangements with the truck lines for regular shipments of full truck loads. Irregular shipments require two days.